A1

respectively. The acid salt of amine may include ionized or non-ionized one.--

IN THE CLAIMS:

Please amend the claims as follows.

sub B4

1. (Amended) A paper quality improver for paper making,

which is internally added to a pulp blend containing a deinked pulp in an amount of 10% or more by weight in a material pulp, either before or in a paper making step; and

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which paper quality improver comprises a compound

having a lyotropic degree as defined below of not less

than 4%, and

which provides at least two properties selected from the following paper quality improving properties (i) to (iii):

(i) standard improved bulky value of at least 0.02 g/cm^3,

(ii) standard improved brightness of at least 0.5 point, and

(iii) standard improved opacity of at least 0.5 point; and wherein the

A

lyotropic degree (%) = (α_0 - α) / α_0 x 100

wherein α: the water content in a wet sheet obtained by

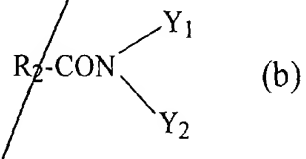
adding 5 parts by weight of the compound, which is the paper quality improver for the paper making to 100 parts by weight of the pulp blend and subjecting the pulp blend to papermaking; and

α_0: the water content in a wet sheet obtained by

subjecting the pulp blend to papermaking without adding the compound, which is the paper quality improver for the papermaking, to the pulp blend.

2. (Amended) The paper quality improver for papermaking as claimed in Claim 1, wherein the compound is selected from the group consisting of (A) organosiloxane, (B) glyceryl ether, (C) amide, (D) amine, (E) acid salt of amine, (F) quaternary ammonium salt, (G) imidazole, (H) ester of polyhydric alcohol and fatty acid and (I) alkylene oxide-added ester being an ester derived from polyhydric alcohol and fatty acid and having from more 0 mole to less 12 moles on average of C_{2-4} alkylene oxide group per 1 mole of the ester

wherein the amide is not formula (b)



(b)

wherein R_2 represents an alkyl group, alkenyl group, or α hydroxyalkyl group having 7 to 35 carbons, and Y_1 and Y_2 are the same or different and represent a hydrogen atom, R_4, R_6CO, $-(AO)_n-COR_3$ or $-(AO)_nH$;

wherein R_4 represents a hydrogen atom or an alkyl group having 1 to 3 carbon atoms, R_3 and R_6 each represent an alkyl group, alkenyl group, or α hydroxyalkyl group having 7 to 35 carbons, AO represents alkylene oxide, and n is an average number of added moles of 1 to 20.

3. (Amended) A paper quality improver for papermaking as claimed in Claim 1 or 2, which further comprises at least one compound selected from (a) anionic surfactant and (b) cationic surfactant.

4. (Amended) A paper quality improver for papermaking as claimed in claim 1 or 2, which provides a standard improved bulky value of at least 0.02 g/cm^3.

5. (Amended) A paper quality improver for papermaking as claimed in Claim 1 or 2, which provides a standard improved brightness of at least 0.5 point.

6. (Amended) A paper quality improver for papermaking as claimed in Claim 1 or 2, which provides a standard improved opacity of at least 0.5 point.

7. (Amended) A method for producing a pulp sheet, wherein the paper quality improver for papermaking as defined in Claim 1 is added before or in the papermaking step.

8. (Amended) A method for producing a pulp sheet, wherein the paper quality improver for papermaking as defined in Claim 1 and an agent for promoting to fix the paper quality improver for papermaking onto the pulp sheet are added before or in the papermaking step.

9. (Amended) A pulp sheet produced by adding the paper quality improver for papermaking as defined in Claim 1 before or in the papermaking step.

10. (Amended) A method for producing a pulp sheet, modified to satisfy at least two properties selected from the following (1) to (3), which comprises:

adding internally a compound having a lyotropic degree as defined below of not less than 4% before or in a papermaking step into pulp slurry, and

subjecting the pulp to a papermaking:

lyotropic degree (%) = (α_0 - α)/ α x 100

wherein α: the water content in a wet sheet obtained by adding 5 parts by weight of the compound which is the paper quality improver for the papermaking to 100 parts by weight of pulp, and subjecting the pulp to the papermaking; and α_0: the water content in a wet sheet obtained by subjecting pulp to the papermaking without adding the compound which is the paper quality improver for the papermaking to the pulp;

(1) improved bulky value of at least 0.02 g/cm^3,

(2) improved brightness of at least 0.5 point, and

(3) improved opacity of at least 0.5 point.

11. (Amended) A method for modifying a pulp sheet, which comprises internally adding a compound having the lyotropic degree as defined in Claim 10 of not less than 4%, before or in the paper making step into a pulp slurry to provide at least two of the properties (1) to (3) as defined in Claim 10 to the pulp sheet.

12. (Amended) A modified pulp sheet which satisfies at last two properties selected from (1) to (3) as defined in Claim 10, which pulp sheet is obtained by internally adding

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the compound having the lyotropic degree as defined in Claim 10 of not less than 4% into pulp slurry before or in the papermaking step.

Please add the following new claim.

--14. (New) A paper quality improver for papermaking, which is internally added to a pulp blend containing a deinked pulp in an amount of 10% or more by weight in a material pulp, either before or in a papermaking step;

and

which paper quality improver comprises a compound having a lyotropic degree as defined below of not less than 4%, and

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which provides at least two properties selected from the following paper quality improving properties (i) to (iii):

(i) standard improved bulky value of at least 0.02 g/cm^3,

(ii) standard improved brightness of at least 0.5 point,

and

(iii) standard improved opacity of at least 0.5 point;

and wherein the

lyotropic degree (%) = $(\alpha_0 - \alpha)/\alpha_0 \times 100$

wherein α: the water content in a wet sheet obtained by adding 5 parts by weight of the compound, which is the paper quality improver for the papermaking, to 100 parts by weight of the pulp blend and subjecting the pulp blend to papermaking; and α_0: the water content in a wet sheet obtained by subjecting the pulp blend to papermaking without adding the compound, which is the paper quality improver for the papermaking, to the pulp blend. The paper quality improver for papermaking as claimed in Claim 1, wherein the compound is selected from the group consisting of (A) organosiloxane, (B) glyceryl ether, (C) amine, (D) acid salt of amine, (E) quaternary ammonium salt, (F) imidazoe, (G) ester of polyhydric alcohol and fatty acid and (H) alkylene oxide-added ester being an ester derived from polyhydric alcohol and fatty acid and having from more 0 mole to less 12 moles on average of C_{2-4} alkylene oxide group per 1 mole of the ester.--